

REMARKS

The Examiner's indication that claims 5 and 13-20 remain allowed has been noted, as has the fact that claim 3 has only been rejected for indefiniteness and presumably would also be allowed if the indefiniteness is corrected. As for the withdrawal of the allowability of claims 3, 6, 7, and 10, while the basis for the current rejections of these claims is considered inappropriate, with the exception of claim 10, these claims have been amended in order to advance prosecution as has claim 1. Additionally, with respect to the request by the Examiner, a copy of the technical paper cited in the amended specification, such was previously submitted as can be seen from the appended copy of a Information Disclosure Statement By Applicant form bearing a PTO date stamp of June 18, 2001 and which was signed off by the Examiner with respect to consideration of this reference; however, for the Examiner's convenience, another copy is appended hereto. On the basis of the above actions and the following remarks, further consideration of this application is hereby requested.

Claim 3 was rejected under 35 U.S.C. § 112 as being indefinite. It is the Examiner's stated view that there recitation "before filtering" renders this claim indefinite since more than one filter is recited. While the Examiner position relates to the breadth of the claim, no any issue of indefiniteness, claim 3 has been amended to refer to the "unfiltered" sound instead of the sound before filtering and with this change it is submitted that this claim is unquestionably clear and definite. Thus, withdrawal of this rejection is in order and is now requested, and with the elimination of the indefiniteness, claim 3 should now be in condition for allowance.

Claims 1, 9 and 11-12 have been rejected under 35 U.S.C. § 103 as being unpatentable over the combined teachings of the patent to Harley in view of the newly cited Bose et al. patent. This rejection is inappropriate, especially to the extent that it relates to currently amended claim 1.

That is, while the Examiner still acknowledges that Harley lacks a pre-emphasis filter, she is now relying on the Bose et al. patent to support of her position that the claimed use of a pre-emphasis filter that is "a high-pass shelving filter for increasing amplification prior to establishment of the at least one impulse transfer function by said at least one digital filter means, said shelving filter having a shelving limit at about 3,000 Hz," would be obvious in Harley.

As noted in applicants' preceding response, applicants' use of a shelving filter is disclosed at page 8, line 29 of the present application as being important, in the context of the present invention, for preventing the impulse transfer function from being distorted, and this contextual significance is something that is not recognized by the prior art.

As for the Bose et al. patent, it is submitted that this reference cannot properly be relied upon by the Examiner since it constitutes nonanalogous art. In this regard, the Examiner's attention is directed to the following section of the Manual of Patent Examining Procedure:

- I. 2141.01(a) Analogous and Nonanalogous Art [R-2]**
- II. TO RELY ON A REFERENCE UNDER 35 U.S.C. 103, IT MUST BE ANALOGOUS PRIOR ART**

The examiner must determine what is "analogous prior art" for the purpose of analyzing the obviousness of the subject matter at issue. "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). See also *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986); *In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992) ("A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem."); * *Wang Laboratories Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed. Cir. 1993); and *State Contracting & Eng'g Corp. v. Condotte America, Inc.*, 346 F.3d 1057, 1069, 68 USPQ2d 1481, 1490 (Fed. Cir. 2003) (where the general scope of a reference is outside the pertinent field of endeavor, the reference may be considered analogous art if subject matter disclosed therein is relevant to the particular problem with which the inventor is involved).

Thus, for the Bose et al. patent to be relied upon by the Examiner it must either be from the field of the applicants' invention, which is electronic stethoscopes, or it must be relevant to the particular problem that the present inventors were concerned with, which is the providing an electronic stethoscope with the ability to sound like a particular type of acoustic stethoscope. However, the Bose et al. patent is directed to an AM radio receiver which is remote from the field of medical instruments let alone stethoscopes in particular, and the

problem to which the Bose et al. patent is directed relates to comparing upper and lower sidebands of an AM signal and selecting the one that has the lowest audible noise content, subject matter that has absolutely no relevance to the particular problem to which the present inventor were involved and certainly no subject matter that would logically have been considered by one seeking to solve the problems associated with producing an electronic stethoscope with the ability to sound like a particular type of acoustic stethoscope. Thus, the Bose et al. patent does not represent analogous prior art and cannot properly be relied upon by the Examiner in making a rejection under § 103.

However, even if the Bose et al. patent were analogous art, it would not lead to modification of the Harley stethoscope in a manner that would result in the present invention. In particular, Bose refers to a pre-emphasis filter (referred to by numeral 38 in the description, but designated 39 in the drawings) which functions in a manner completely unrelated to the pre-emphasis filter of the present invention. First of all, the Bose et al. patent deals with a local emphasis downstream of the input of the whole signal processing circuit for a correlation that is described at col. 8, lines 13-27. Secondly, the purpose of the filters of the Bose et al. patent requires that they be provided in pairs, because the whole invention of the Bose et al. patent is dependent on having access to both the upper and lower sideband of an Amplitude Modulated signal (AM broadcast). The purpose of the invention of the Bose et al. patent is to determine the interference/disturbance in both sidebands, and then to select the one that has the lowest audible disturbance content, as noted previously. Thus, the correlation performed by Bose et al. would not work for a single channel system such as that of the present invention. Furthermore, the Bose et al. patent is not all concerned with the impulse transfer function, only energy, and therefore, for a purpose unrelated to that of Harley or the present invention, has found the use a single-order shelf filter that begins to rise at 1 kHz and returns to a flat response at 10 kHz to be satisfactory.

Thus, a combination of the Harley and Bose et al. patents, even if proper, which it is not, would not lead to the present invention. However, to advance prosecution, claim 1 has been amended to recite that the transducer of the present invention is "a single vibration transducer for creating a single channel input signal." Since the Bose et al. patent has no relevance in such a context, being directed to correlating of multiple signals, and given the

fact that Harley uses multiple transducers 3, 8, 9, no combination of these two references could lead to an electronic stethoscope as claimed.

Therefore, for all of the reasons stated above, the rejection of claims 1, 9 and 11-12 under § 103 based on the combined teachings of the Harley and Bose et al. patents should be withdrawn and such action is hereby requested.

With regard to claims 6-8 which continue to be rejected under 35 USC § 103 based on the combined teachings of the Harley and Hower patents, while it is still believed that this rejection is inappropriate for the reasons stated in applicants' preceding response, with the amendments made above it certainly can have no continuing vitality for the following reasons.

Firstly, the Examiner has failed to counter applicants' position that Hower is the type of filter with which useful results could not be obtained in the context of the present invention. Likewise, the Examiner has failed to explain how Hower, which is *not* directed to a *digital* stethoscope, can suggest a solution to a problem that is not relevant in the context of his invention.

Furthermore, as previously noted, the circuit diagram of Hower's Fig. 2, and the part of his description at column 2, lines 55-62, indicates that his filter is performing post-processing of the amplified signal, because the filter components 61, 65, and 67 are placed right at the output, just before the speaker. This means that there is no pre-emphasis of the signal being performed, let alone one comparable to that of the present invention. Amended claim 6 further highlights this difference between the present invention by reciting that the at least one digital filter means for establishing at least one impulse transfer function corresponding to at least one acoustic stethoscope type is "located for receiving a signal *after* it has been processed by said pre-emphasis filter means." Use of such an arrangement in Harley simply would not follow from anything taught by Hower.

Also relative to claim 6, the Examiner continues to maintain that "a noise control stethoscope constitutes as a type of acoustic stethoscope." In applicants' preceding response they pointed out that such a position

is contrary to scientific principles. No type of acoustic stethoscope would be able to reproduce body sound (vibrations, etc.) as detected in precisely that form (i.e., with extraneous noise removed) at the ear of the physician. Harley is able to do so due to the feedback circuit utilizing the microphone placed in the headphone. Thus, the Examiner's attempt to create a new type of acoustic

stethoscope, i.e., a noise controlling one, for purposes of having Harley's impulse transfer function correspond to at least one acoustic stethoscope type as claimed in the present application, is improper and cannot form an appropriate basis for asserting that the present invention as defined by claim 1 is obvious.

In maintaining this rejection the Examiner has failed to provide any evidence to counter applicants' position by demonstrating the existence of at least one *acoustic* stethoscope with a noise reduction capability. If such an acoustic stethoscope does not exist, then Harley cannot attempt to produce the sound performance of such a nonexistent type of stethoscope. However, since applicants' invention produce the sound performance of known, existing types of acoustic stethoscopes, e.g., the "Littman Classic II" referenced on page 9 of the specification of this application, and not a nonexistent noise reduction type of acoustic stethoscope, claim 6 now excludes such a type of acoustic stethoscope by setting forth that the type of acoustic stethoscope is one that is "categorized other than by noise reduction."

As for claims 7 & 8, claim 7, like claim 1, has been amended to indicate that the transducer of the present invention is "a single vibration transducer for creating a single channel input signal," and it also now recites that the pre-emphasis filter means emphasizes "high frequencies of said single channel input signal." Since, as noted above, Harley uses multiple transducers 3, 8, 9, no combination of this reference with Hower could lead to an electronic stethoscope as now claimed.

Moreover, with respect to the windowing aspect of claim 1, the Examiner has improperly taken "official notice" of a fact that the Examiner has been unable to establish. That is, in part A of MPEP § 2144.03 it is stated that:

Official notice without documentary evidence to support an examiner's conclusion is permissible only in some circumstances. While "official notice" may be relied on, these circumstances should be rare when an application is under final rejection or action under 37 CFR 1.113. ***Official notice unsupported by documentary evidence should only be taken*** by the examiner ***where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known.*** (Emphasis added.)

And in part C of MPEP § 2144.03 it is further indicated that "C. If Applicant Challenges a Factual Assertion as Not Properly Officially Noticed or not Properly Based Upon Common Knowledge, the Examiner Must Support the Finding With Adequate Evidence."

The Examiner has stated that "digital pattern recognition" is well-known. However, the invention is not to any manner of digital pattern recognition for any purpose. To the contrary, the invention specifies that digital pattern recognition is used for windowing (a well-defined procedure in signal processing) in relation to a single channel digital stethoscope. No evidence of such exists and most certainly it is not so notoriously well known as to be capable being instantly and unquestionably demonstrated as being well-known (if it was, certainly the Examiner would have provided such evidence). Put another way, there is no nexus between pattern recognition being known for various unspecified purposes and use of pattern recognition for windowing an "acoustic signal to adaptively remove noise from the surroundings and suppress repetitive signals in the observed signal" in a single channel digital stethoscope, and apart from the impermissible use of hindsight, there is simply no basis for the Examiner to conclude that such would be obvious simply on the basis of generic pattern recognition being known. Thus, unless the Examiner can provide some evidence to bridge the gap in her reasoning and which demonstrates that what she has postulated actually would have been obvious to one of ordinary skill in the art, her reliance on official notice and her rejection of claim 7 must be withdrawn.

Therefore, for all of the reasons stated above, the rejection of claims 6-8 under § 103 based on the combined teachings of the Harley and Hower patents are not sustainable and should now be withdrawn.

Claim 10 has also been rejected under 35 U.S.C. § 103 as being unpatentable over the combined teachings of the patent to Harley in view of the newly cited Bose et al. patent.

Firstly, for the reasons indicated above, the Bose et al. patent constitutes nonanalogous prior art that cannot be properly relied upon. Furthermore, here again, the Examiner has leapt to a conclusion that is unsupported by any evidence. That is, claim 10 recites that the "pre-emphasis filter is located in the signal path before said at least one digital filter means, and for pre-emphasis of the high frequencies, acts in dependence of the thickness of tissue which is present between an actual sound source and the transducer." The Examiner has asserted that "it would be obvious that the pre-emphasis acts in dependence of the thickness of tissue (body surface of a patient), as evident by the fact that all factors are taking *[sic]* in consideration when taking acoustical sounds of a body in respect what generates the sound and with what and how it is being transmitted to achieve an efficient

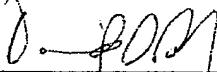
quality of sound." However, this conclusion is neither obvious nor supported by any factual evidence.

In particular, the Examiner has acknowledged that Harley lacks a pre-emphasis filter so clearly Harley did not find it necessary or obvious to provide or even suggest the use of such a filter to account for any factors, let alone the specific factor of tissue thickness (not surface area) for which it is used according to claim 10. Bose et al. cannot provide this missing suggestion since their patent is directed to an AM radio and processing of an AM radio broadcast signal. Thus, applicants fairly ask the Examiner to point out how it can be obvious to do what is neither done nor suggested by the prior art, let alone to take an element from a nonanalogous radio patent that is used for an unrelated radio signal processing purpose and add it to a stethoscope for a purpose (accounting for skin thickness) that is not accounted for in that stethoscope or any other digital stethoscope patent of record.

Thus, the rejection of claim 10 is simply untenable and the Examiner's prior indication of this claim is allowable was correct and should be reinstated.

While the present application is now believed to be in condition for allowance, should the Examiner find some issue to remain unresolved, or should any new issues arise, which could be eliminated through discussions with applicant's representative, then the Examiner is invited to contact the undersigned by telephone in order that the further prosecution of this application can thereby be expedited.

Respectfully submitted,



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